# TWO CASES OF PRIMARY NEUROTIC ATROPHY BEARING A RESEMBLANCE TO MULTIPLE NEURITIS.*

By F. X. Dercum, M.D.,

PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE JEFFERSON MEDICAL COLLEGE.

The following cases are worthy of record because of the rarity of the affection, and because of the resemblance they both bear in their present condition to multiple neuritis:

Case I.—M. McM., female, white, married, aged 47, birthplace Philadelphia, admitted to the nervous wards of the Philadelphia Hospital May 9, 1899.

Family History.—Mother died at fifty years of age of dropsy. She has not heard of her father for many years. Nothing known of brothers and sisters.

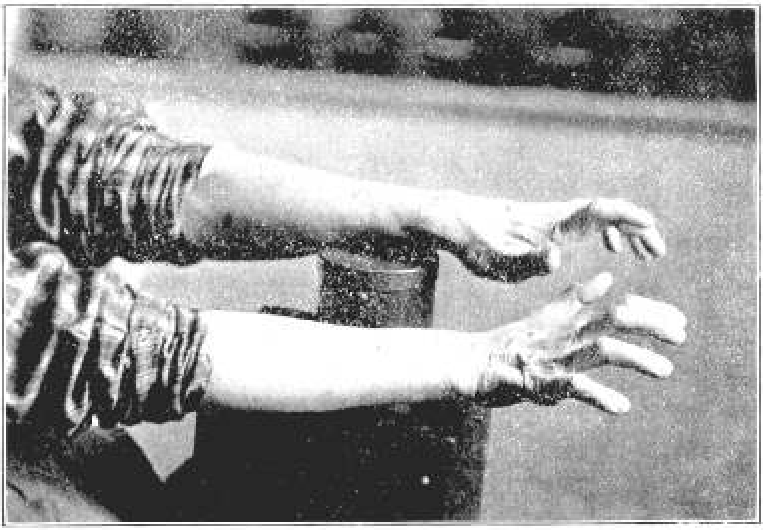

Fig. 1. Hands in Case I., showing position of fingers in extension and interosseous atrophy.

Personal History.—Had smallpox, measles, whooping-cough and mumps when a child. Once had an abscess of the knee. Denies venereal history and alcoholism. Has had two children, both now dead; one of cholera infantum and one of accident. Had no miscarriages. Still menstruates regularly.

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*These cases were presented before the Philadelphia Neurological Society, Jan. 22, 1900. See p. 287.

Present Illness.—About five years ago she noticed that her feet and legs were becoming weak. After awhile had to walk with a cane. The trouble slowly became more marked and two years later she noticed a change in her hands; she could not use them as well as before. She noticed that her toes dragged in walking and she found difficulty in going upstairs. At this time pain, quite severe, was present on the inner side of both legs below the knees; at times it was sharp. One morning she noticed that she could not use her right arm. It was very weak for about six weeks and then gradually she regained control over it. Soon noticed also that the muscles of both hands were wasting, especially between the thumbs and index fingers. This wasting has continued.

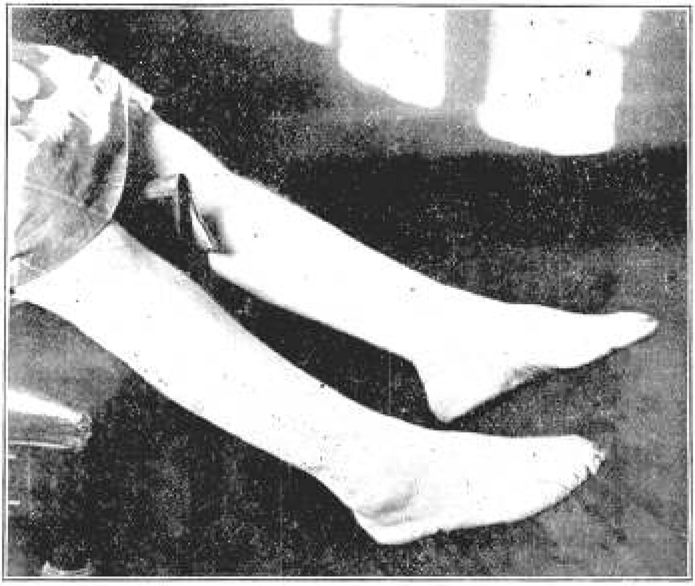

Fig. 2. Feet in Case I., showing foot-drop.

Status Præsens.—Is a fairly well-built woman. In both hands there is marked wasting of the thenar and hypothenar eminences and of the interosseous muscles. The lower third of both forearms is also somewhat wasted. There is no wasting in the upper arm or shoulder. The grip is weak in both hands. In extension the fingers assume the position of interosseous palsy; there is over-extension of the proximal phalanx and flexion of the other phalanges. The palsy and wasting of muscles is not limited to the ulnar supply, but is also marked, as has been stated, in the median and radial distributions. Pronation and supination are normal. Flexion and extension of the forearm upon the arm are also normal.

The muscles of the calves are somewhat flattened. All of the muscles of the legs are weak and there is a decided foot-drop upon either side. The patient walks with a typical steppage gait. The thighs are flabby. Both knee-jerks are absent.

There is decided tactile loss over both forearms, but this loss is merely a hypesthesia. There is no loss to thermal or pain sense.

There is hypesthesia of both legs, more marked over left knee and right lower leg. The pain sense is somewhat diminished, and there is also some blunting of the temperature sense. The responses over the thigh are prompt, except over upper outer aspect, where there is some hypesthesia.

There is no sensory loss over the trunk. The plantar reflex consists of flexion of leg at knee with a tendency to extend the feet. No movement of the toes is elicited. A wrist-drop is not present, although there is some weakness of the extensor muscles of the forearms.

Examination of the eyes by Dr. de Schweinitz revealed the following: Nebulous cornea from attack of smallpox. Pupil dilated. Dense haze through cornea prevents study of optic nerves. Apparently neither gross atrophy nor neuritis. Width of palpebral fissure is about three-eighths of an inch, slightly wider on the right side. This apparent drop is due to the former keratitis and probable former granular lids. It is not ptosis, the movements of the lids being perfect.

Case II.—S. T., white, male, aged 37, born in Philadelphia, occupation bartender, single. Admitted to the wards of the Philadelphia Hospital July 27, 1899.

Family History.—Father died of congestion of the brain. Mother died of kidney disease. One brother died early in life, cause unknown. Another brother, four years older, suffers from an affection of the arms and legs very much like that of the patient.

Personal History.—No illness of moment in childhood save whooping-cough. In boyhood and early adult life was perfectly well. Was a bartender and drank moderately. Subsequently worked as fireman and was exposed to great heat; never, however, suffered from heat stroke. Never had anything to do with paints and never suffered from lead poisoning.

Several years ago he began to have pain in both thighs and subsequently in the legs and feet. The pain was at times shooting, at times dull, never burning. It would last for an hour or two, disappear and then return after several hours had elapsed. For three or four months he has had pains in the arms, more especially on motion; he would "catch" his muscles.

Two years ago he noticed that the ankle of the right foot was becoming weak and tended to turn. Six months later he noticed the same thing in the left foot. He found that he had now to raise his feet higher from the ground than usual so as not to drag his toes. He had no other symptoms. Had perfect control over the bladder and bowel.

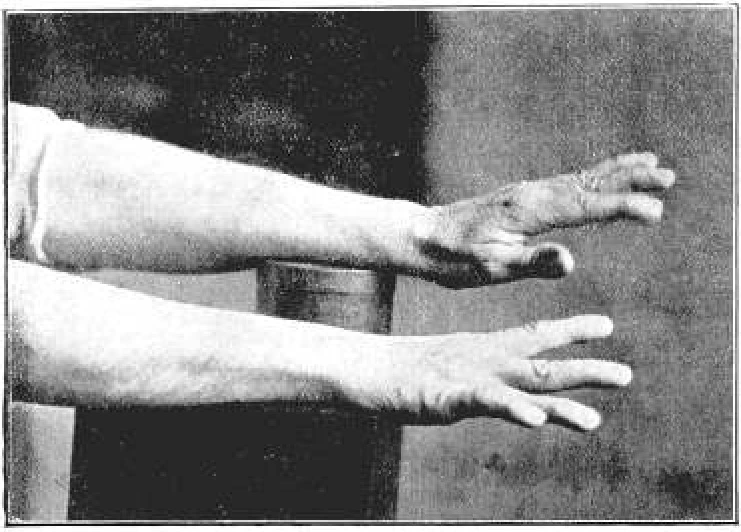

Fig. 3. Hands of Case II., showing position of fingers in extension.

Status Præsens.—Sway slightly increased but not ataxic. Stands with difficulty on the right leg alone and with greater difficulty on the left. Slight intention tremor of both hands. Knee-jerks exaggerated. No ankle-clonus. Face, back, chest and abdomen present no abnormalities. Both hands are cold, damp and livid. Marked interosseous wasting, most pronounced in the ulnar distribution. In the right hand the fingers are irregularly extended. The thumb is extended normally. In the forefinger there is slight retroflexion at the metacarpal articulation, while the middle and ring fingers are retroflexed at the proximal and middle articulations. The little finger assumes position of ulnar palsy though not typically. It is retroflexed at the metacarpal articulation and flexed at the phalangeal articulations. The palm is hollowed out because of wasting of the lumbricales. There is some flattening of the thenar and hypothenar eminences. In all the fingers the distal phalanx is slightly flexed. In the left hand all of the fingers present slight retroflexion at the proximal phalangeal joint and flexion at the distal phalangeal joints. The thumb is held in a normal position. The palm is slightly hollowed; less decidedly than the right. Both thenar and hypothenar eminences show slight wasting; the grip is weak in both hands.

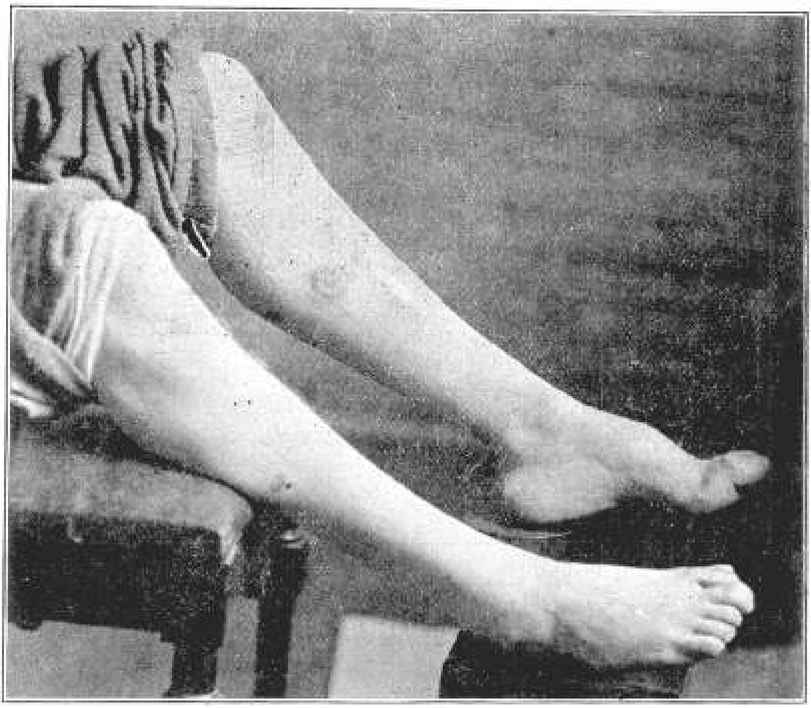

Fig. 4. Feet and legs of Case II., showing foot-drop, position of toes and exaggeration of plantar arch.

All of the cutaneous senses are preserved in all portions of arms, trunk and head.

The thighs are normal in size. Both legs are wasted, the right more so than the left. In the right leg there is marked wasting of the tibialis anticus and entire peroneal group. The gastrocnemius is also wasted but less markedly. There is complete foot-drop—patient utterly unable to flex the foot on the leg. The plantar arch is very greatly increased. The toes are over-extended on the metatarsal joints and sharply flexed at the phalangeal joints. This is typically seen in the great toe. The normal curves of the foot are greatly exaggerated. The patient is unable to extend the toes; he can, however, flex them. No impairment of the muscles of the thighs. No movement of the toes on irritating the plantar surface. All forms of sensation are preserved. In the leg there is marked wasting in the peroneal group, though not as pronounced as in the right leg. Wasting in gastrocnemius less marked than right. There is also complete foot-drop, and, as in the right foot, there is an exaggeration of the normal curves of the foot.

The patient walks with a steppage gait, the feet being raised somewhat higher than normally so as to clear the ground with the toes.

Examination of the eyes was entirely negative.

These cases are exceedingly interesting because of the superficial resemblance which both bear to multiple neuritis. The history and general symptoms, however, leave no doubt as to their true nature.

It will be interesting to briefly summarize the post-mortem findings in this, as yet, obscure affection. Siemerling[1] has reviewed the various results of the limited number of autopsies that have thus far been held.

In Virchow's case there was degeneration of the columns of Goll, of the nerves and muscles and also atrophy of the anterior cornua.

In Dubreuihl's case there was slight increase of the glia in the columns of Goll, slight increase of staining in the pyramidal columns and pronounced changes in the peripheral nerves growing less from the periphery toward the centers. There was also atrophy of muscles.

In the case of Dejerine-Sottas there were changes in the posterior columns; sclerosis of the posterior roots in the lumbar region and sclerosis of the columns of Goll posteriorly in the cervical region. There was also interstitial hypertrophic neuritis extending as far as the cord and involving the roots and spinal ganglia.

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[1] E. Siemerling, Archiv für Psychiatrie und Nervenkrankheiten, Volume XXXI, 1898-1899, Heft. 1 and 2, page 105.

In Marinesco's case there was degeneration of the posterior columns, of the posterior horns, of the posterior roots, atrophy of the cells of the anterior horns, atrophy of the muscles and degeneration of the peripheral nerves with hypertrophy of the interstitial connective tissue.

In Gombault and Mallet's case there was sclerosis of the posterior columns and posterior horns, atrophy of the anterior horns, hypertrophic sclerosis of the roots and peripheral nerves, atrophy of the muscles.

In Siemerling's case there was degeneration of the posterior columns, most marked in the lower dorsal cord. In the upper dorsal and cervical cords there was almost complete degeneration of the lateral columns and in part of the antero-lateral bundle, most pronounced in the lower dorsal and lumbar cord. In addition, Siemerling found diminution of the cells in the anterior horns and in Clarke's columns, degeneration and diminution of the fibers of the anterior roots, destruction of cells in the spinal ganglia, degeneration of the peripheral nerves and marked atrophy of muscles.

The changes which appear to be common to all cases are a degeneration of the peripheral nerves and of the posterior columns together with atrophy of muscles. The changes appear to be most marked in the peripheral nerves and become less pronounced in passing from the periphery to the cord.

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57 NEUERE UNTERSUCHUNGEN ÜBER DIE PSYCHISCHEN WIRKUNGEN DES ALKOHOLS. (Newer Investigations on the Psychical Effects of Alcohol). Kraepelin (Münchener medicinische Wochenschrift, 1899, No. 42, S. 1365).

Reviewing the results of other experimenters and comparing them with his own, the author feels justified in drawing the following conclusions:

The grasping of external impressions and the linking of concepts suffer great deterioration through the use of alcohol. The production of muscular movements is temporarily made easier, but the power is lessened, and the more so the more the muscles come into action, while fatigue occurs more quickly. The action of one large dose of alcohol may be prolonged for 24 or 48 hours, while its continued use causes permanent diminution of capacity. ALLEN.